

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Claims 29-35 and 38-41 are pending. Claims 29-35 and 38-41 stand rejected.

Claim 29 has been amended. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicants submit that the amendments do not add new matter.

Rejections Under 35 U.S.C. 102(b)

Claims 29, 30, 31, 33 and 34 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent No. JP05-198512 of Itsudo et al. ("Itsudo"). The Examiner stated that

i. A wafer (2; Figure 6) processing apparatus (Figure 6, 8; abstract), comprising: a processing chamber (1; Figure 6; abstract) defined by a lower wall, an upper wall (8; Figure 6) and side walls extending from the lower wall to the upper wall (8; Figure 6), a wafer (2; Figure 6) supply opening (not shown; inherent) being formed in one of the walls for transferring a wafer (2; Figure 6) into the chamber (1; Figure 6; abstract); a susceptor (6; Figure 1) in the chamber (1; Figure 6; abstract) on which the wafer (2; Figure 6) can be located as so that an upper surface of the wafer (2; Figure 6) faces the upper wall (8; Figure 6); a manifold (9; Figure 6) component located on the chamber (1; Figure 6; abstract) and, together with the upper surface of the upper wall (8; Figure 6), defining a manifold cavity (9; Figure 6); an exhaust line (4; Figure 6) connected to the chamber (1; Figure 6; abstract), for the flowing a gas from the chamber (1; Figure 6; abstract), connected such that the gas has a tendency to flow toward the exhaust line (4; Figure 6); and a gas supply line (12; Figure 6) connected to the manifold (9; Figure 6) component, wherein the upper wall (8; Figure 6) has a plurality of gas supply openings (10; Figure 6, 8), each of the gas supply openings (10; Figure 6, 8) formed into an upper surface and out of a lower surface of the upper wall (8; Figure 6) such that each gas supply opening is defined by a corresponding interior surface of the upper wall (8; Figure 6), the gas supply openings (10; Figure 6, 8) being nonuniformly (Figure 8) distributed over the upper wall (8; Figure 6) to create a flow pattern that counteracts the tendency of the gas flow toward the exhaust line (4; Figure 6), and thus promotes even processing over the upper surface of the wafer (2; Figure 6), as claimed by claim 29- When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562.F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

(p. 2-3, Office Action 111004)

Applicants respectfully submit that claim 29, as amended, is not anticipated by Itsudo under 35 U.S.C. 102§(b). Amended claim 29 includes the following limitations:

A wafer processing apparatus, comprising:
a processing chamber defined by a lower wall, an upper wall and side walls extending from the lower wall to the upper wall, a wafer supply opening being formed in one of the walls for transferring a wafer into the chamber;
a susceptor in the chamber on which the wafer can be located so that an upper surface of the wafer faces the upper wall;
a manifold component located on the chamber and, together with the upper surface of the upper wall, defining a manifold cavity;
an exhaust line connected to the chamber, for flowing a gas from the chamber, connected such that the gas has a tendency to flow toward the exhaust line; and
a gas supply line connected to the manifold component, the gas supply connected via a gas supply line opening formed through an upper surface of the manifold cavity, wherein the upper wall has a plurality of gas supply openings, each of the gas supply openings formed into an upper surface and out of a lower surface of the upper wall such that each gas supply opening is defined by a corresponding interior surface of the upper wall, the gas supply openings being nonuniformly distributed over the upper wall to create a flow pattern that counteracts the tendency of the gas to flow toward the exhaust line, and thus promotes even processing over the upper surface of the wafer.

(Amended claim 29) (emphasis added)

Applicants respectfully disagree that Itsudo anticipates the present invention as claimed in claim 29. The processing gas of Itsudo comes into the chamber through “reaction gas bring-in port” 3 and does not pass through the holes 10. Itsudo discloses changing the vertical thickness of the blowout width of a slit-like blowout port 5, in order to vary film thickness. The Examiner is erroneously equating “inactive gas bring-in port 12” with the processing gas supply line as claimed. (See Itsudo, Figure 6, and Abstract).

Equating the inactive gas bring-in port 12 with the processing gas supply line as claimed would defeat an objective of Itsudo. That is, processing gas entering the manifold cavity from the inactive gas bring-in port 12, located on the sidewall of the “light source chamber” 9 would cause uneven film thickness distribution. (Note that the inactive gas bring-in port 12, located on the sidewall of the light source chamber 9 is proximate to the higher density of holes 10 of jetting board 8. Processing gas entering thusly would be unevenly distributed. This, however is not at all what Itsudo is disclosing. In Itsudo, processing gas does not enter above the holes, but below

them. It is only inactive gas which enters the light source chamber. The processing gas of Itsudo enters the reaction chamber, and at that parallel to the surface of the wafer.

Applicants have amended the claims to include the limitation that the gas supply line opening is formed through an upper surface of the manifold cavity to emphasize the fundamental differences between the invention as claimed in amended claim 29 and the disclosure of Itsudo.

For theses reasons, applicants respectfully submit that claim 29 is not anticipated by Itsudo. Given that claims 30 -35 and 38- 41, depend from claim 29, applicants respectfully submit that claims 30 – 35 and 38 -41, are likewise not anticipated by Itsudo.

Rejections Under 35 U.S.C. § 103(a)

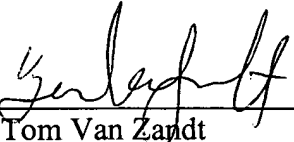
Claims 32, 35, 38, 39 and 40 stand rejected under 35 U.S.C. § 103 as being unpatentable over Japanese Patent No. JP05-198512 of Itsudo et al. (“Itsudo”) in view of U.S. Patent No. 6,444,039 of Nguyen (“Nguyen”).

Applicants respectfully submit that the combination of Nguyen does not remedy the deficiencies of Itsudo, as discussed above. Therefore, applicants respectfully submit that claims 32, 35, 38, 39, and 40 are not rendered obvious by Itsudo in view of Nguyen.

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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